Remarks

The Office Action dated January 11, 2006, and made final, has been carefully reviewed and the following remarks are made in consequence thereof.

Claims 1-5 and 8-17 are now pending in this application. Claims 1-5 and 8-17 stand rejected.

The undersigned wishes to thank Examiner Perrin for the courtesies extended in a telephonic interview with Rozell Williams Jr. on March 6, 2006, in which the Chamberlin et al. reference and the present invention were contrasted. The use of the term "predetermined" as a claim limitation was also discussed. No agreement was reached.

Chamberlin is the primary reference cited against the present invention. The presently pending claims recite locking and unlocking of a washer lid at first and second predetermined speeds. In the response to Applicants' previous arguments, the Examiner cites Seagram & Sons v. Marzall 84 USPQ 180 (1950) for its finding that "a claim was indefinite where it specified "predetermined" temperatures, since "predetermined", according to applicant's definition, merely means determined beforehand". The record gives no indication of the content of the specification that was at issue. Based on Seagram, the Office Action asserts that Chamberlin anticipates the claimed invention "since Chamberlin discloses causing the lid to be locked at any speed (first predetermined speed) above a speed (for instance, 20, or 100 RPM) and causing the lid to be unlocked at any speed (second "predetermined" speed) below a speed (for instance, 20 or 100 RPM)".

Applicants respectfully disagree. Notwithstanding Seagram, in more recent cases, the term "predetermined", when used as a claim limitation, has been given its ordinary meaning. For example, in Koito Manufacturing Co. v. Turn-Key-Tech LLC, 72 USPQ2d 1190 (CA FC 2004), claims for injection molding a plastic product included the limitation "defining-mold-cavity-

section in a first predetermined general direction". The district court conducted a Markman hearing and construed, among other terms, the claim language "predetermined general direction". "In its construction of the term "predetermined general direction," the court found that "predetermined" should be given its ordinary meaning, which the court found to be "determined beforehand"." Id. at 1194.

Contrary to the assertion in the Office Action, the claimed invention includes two threshold speeds, specifically, a first predetermined speed and a second predetermined speed less than the first predetermined speed. Chamberlin, on the other hand, does not describe or suggest a second predetermined speed. At col. 5, lines 47-52, Chamberlin states: "Circuit 64 as shown herein is designed to output as a speed signal a binary logic spin signal S whenever the sensor signals 62 indicate that the speed of rotation is at or above **a** preselected RPM, such as 20 RPM or 100 RPM, and a no-spin signal (or S) when the speed of rotation is below **the** predetermined speed". When the speed of basket 22 falls below **the** predetermined speed, the output 206 will change the state of, or turn off, spin signal S thereby deenergizing actuator 120 and allowing lid 20 to be opened (col. 6, lines 6-9) (emphasis added). Thus, Chamberlin contemplates only one predetermined speed. Furthermore, it is understood that as a practical matter, locking and unlocking of the lid may occur at speeds that are not precisely the predetermined speed but rather speeds that are substantially equal to the predetermined speed, although slight variations occur. Applicants submit that one of ordinary skill in the art would consider that this condition is representative of only one predetermined speed and that the minor variations that occur do not themselves constitute additional predetermined speeds.

The rejection of Claims 1-5, 8-9, 13-15, and 17 under 35 U.S.C. § 102(e) as being anticipated by Chamberlin et al. ("Chamberlin") (U.S. Patent No. 6,568,018) is respectfully traversed.

Chamberlin describes a speed sensing system for a washing machine (10) that includes a housing (12), a lid (20), and a tub (21) containing a basket 22 with an agitator (23). The basket

is mounted for rotation on an output shaft (24) of a drive shaft (25). A counterweight (30) rotates with the drive shaft. The speed sensing system includes a one part speed sensor (60) that is fixedly mounted in the washer housing so as to detect the passage of the counterweight (30) as it rotates with the drive shaft. The sensor is coupled to a circuit (64) that may be used in a lid lock system. Notably, the described lid lock system operates about only one predetermined speed. "When the basket 22 is rotating above a predetermined speed, the output 206 will turn on (S) causing transistor 210 to conduct and thereby energize actuator 120 and lock the lid 20. When the speed of basket 22 falls below the predetermined speed, the output 206 will change the state of, or turn off, spin signal S thereby deenergizing actuator 120 and allowing lid 20 to be opened." (col. 6, lines 6-9).

Claim 1 recites a method for controlling locking a lid of a washing machine, wherein the washing machine includes an agitation element and a basket. The method includes the steps of: "sensing a spin speed associated with a spin speed of at least one of the agitation element and the basket; causing the lid to be locked when the sensed spin speed exceeds a first predetermined speed; after the first predetermined speed is reached, causing the lid to remain locked until a second predetermined speed is reached that is less than the first predetermined speed; and causing the lid to be unlocked when the sensed spin speed is below the second predetermined speed".

Chamberlin neither describes nor suggests a method for controlling the locking of a lid of a washing machine as recited in Claim 1. More specifically, Chamberlin does not describe or suggest causing the lid to be locked when the sensed spin speed exceeds a first predetermined speed; after the first predetermined speed is reached, causing the lid to remain locked until a second predetermined speed is reached that is less than the first predetermined speed. Rather, Chamberlin describes a lid locking system wherein the lid is locked when the sensed speed is above a predetermined speed and unlocked when the sensed speed is below the same predetermined speed. Accordingly, for the reasons set forth above, Claim 1 is submitted to be patentable over Chamberlin.

Claims 2-5 depend from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 likewise are patentable over Chamberlin.

Claim 8 recites a lid lock system for a washing machine, wherein the washing machine includes a lid, an agitation element, a basket, and a transmission and clutch system, the transmission and clutch system including a drive shaft coupled to the agitation element and basket for causing the agitation element and basket to spin, the lid lock system including "a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket; a lid lock solenoid for controlling operation of a lid lock; and a control circuit for energizing the lid lock solenoid based on the sensor output signal, wherein said control circuit energizes said solenoid to lock the lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains the lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes said solenoid to unlock the lid when the sensor output signal is indicative of a speed that is below the second predetermined speed".

Chamberlin neither describes nor suggests a lid lock system as recited in Claim 8. More specifically, Chamberlin does not describe or suggest a lid lock system wherein the control circuit energizes the solenoid to lock the lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains the lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes the solenoid to unlock the lid when the sensor output signal is indicative of a speed that is below the second predetermined speed. Rather, Chamberlin describes a lid locking system wherein the lid is locked when the sensed speed is above a predetermined speed and unlocked when the sensed

speed is below the same predetermined speed. Accordingly, for the reasons set forth above, Claim 8 is submitted to be patentable over Chamberlin.

Claims 9, 13 and 17 depend from independent Claim 8. When the recitations of Claims 9, 13 and 17 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claims 9, 13 and 17 likewise are patentable over Chamberlin.

Claim 14 recites a washing machine including "a cabinet comprising an opening; a lid movable from and between an open position and a closed position over said opening; a lid lock for locking said lid in a closed position; a basket mounted within said cabinet; an agitation element mounted within said basket; a drive system coupled to said agitation element and to said basket; and a lid lock circuit comprising a sensor for generating an output signal associated with a spin speed of at least one of said agitation element and basket, a lid lock solenoid for controlling operation of said lid lock, and a control circuit for energizing said lid lock solenoid based on the sensor output signal, wherein said control circuit energizes said solenoid to lock said lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains said lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes said solenoid to unlock said lid when the sensor output signal is indicative of a speed that is below the second predetermined speed".

Chamberlin neither describes nor suggests a washing machine as recited in Claim 14. More specifically, Chamberlin does not describe or suggest a control circuit that energizes the solenoid to lock the lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains the lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes the solenoid to unlock the lid when the sensor output signal is indicative of a speed that is below the second predetermined speed. Rather, Chamberlin describes a lid locking system wherein the lid is locked when the sensed speed is

above a predetermined speed and unlocked when the sensed speed is below the same predetermined speed. Accordingly, for the reasons set forth above, Claim 14 is submitted to be patentable over Chamberlin.

Claim 15 depends from independent Claim 14. When the recitations of Claim 15 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claim 15 likewise is patentable over Chamberlin.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-5, 8-9, 13-15, and 17 be withdrawn.

The rejection of Claims 10-12 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Chamberlin in view of Huang (U.S. Patent No. 5,598,074) or Harwood et al. (U.S. Patent No. 5,768,728) is respectfully traversed.

Chamberlin is described above. Huang describes virtual Hall effect signal generating circuitry that can be used in new motors or retrofit into existing motors to replace Hall effect sensors. The solid state circuitry takes the place of Hall effect sensors.

Harwood et al. describe the use of Hall sensors to determine the speed of a washing machine motor.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

The Office Action asserts that Huang describes certain advantages gained through the use of a Hall sensor and a flip flop, citing Huang at col. 2, lines 4-14. However, Huang, at col. 2, lines 4-14 states:

> "The circuitry can be retrofit into existing motors which utilize Hall-effect sensors, replacing those sensors and thereby achieving the advantages of increased reliability, wider temperature operating range, etc. in a cost effective manner, i.e. without having to replace the entire existing motor drive. New motors constructed according to the present invention also achieve the desired results of increased reliability and temperature range compared to conventional brushless DC motors, have precise velocity regulation, are simple to install, and have reduced motor cost, size, and weight compared to conventional motors, and quicker response time due to reduced rotor inertia."

Thus, the advantages described are realized by replacing Hall effect sensors with Huang's solid state circuitry. Rather than teaching the use of Hall effect sensors, Huang teaches the deactivation and removal of Hall sensors in motors in favor of electronic solid state circuitry (see abstract). Therefore, Huang clearly teaches away from the use of Hall sensors. As the Federal Circuit has held, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). No combination based on Huang can establish a prima facie case for obviousness in the use of a Hall effect sensor.

Moreover, Chamberlin and Huang teach away from their own combination. Chamberlin teaches a one part sensor for sensing the passage of a rotatable ferrous metal component of a washing machine to determine the speed of rotation of the washing machine basket. Huang, on the other hand, teaches the deactivation and removal of Hall effect sensors and replacing them with circuitry for use in a sensorless, brushless DC motor that provides output signals substantially the same as those generated by Hall effect sensors. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). In the present case, no suggestion or motivation to combine the prior art disclosures is shown, nor has any reasonable expectation of success been

shown. Moreover, even if combined, the combinations of Chamberlin and Huang and Chamberlin and Harwood, fail to teach all of the limitations of the presently pending claims.

Claims 10-12 depend from Claim 8, which recites a lid lock system for a washing machine, wherein the washing machine includes a lid, an agitation element, a basket, and a transmission and clutch system, the transmission and clutch system including a drive shaft coupled to the agitation element and basket for causing the agitation element and basket to spin, the lid lock system including "a sensor for generating an output signal associated with a spin speed of at least one of the agitation element and basket; a lid lock solenoid for controlling operation of a lid lock; and a control circuit for energizing the lid lock solenoid based on the sensor output signal, wherein said control circuit energizes said solenoid to lock the lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains the lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes said solenoid to unlock the lid when the sensor output signal is indicative of a speed that is below the second predetermined speed".

None of Chamberlin, Huang, or Harwood, considered alone or in combination, describe or suggest a lid lock system as recited in Claim 8. More specifically, none of Chamberlin, Huang, or Harwood, considered alone or in combination, describe or suggest a lid lock system wherein the control circuit energizes the solenoid to lock the lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains the lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes the solenoid to unlock the lid when the sensor output signal is indicative of a speed that is below the second predetermined speed. Rather, Chamberlin describes a lid locking system wherein the lid is locked when the sensed speed is above a predetermined speed and unlocked when the sensed speed is below the same predetermined speed. Huang describes signal generating circuitry to

replace Hall effect sensors. Harwood describe the use of Hall sensors to determine the speed of a washing machine motor. Accordingly, for the reasons set forth above, Claim 8 is submitted to be patentable over Chamberlin in view of Huang and further in view of Harwood et al.

Claims 10-12 depend from independent Claim 8. When the recitations of Claims 10-12 are considered in combination with the recitations of Claim 8, Applicants submit that dependent Claims 10-12 likewise are patentable over Chamberlin in view of Huang and further in view of Harwood et al.

Claim 16 depends from Claim 14, which recites, a washing machine including "a cabinet comprising an opening; a lid movable from and between an open position and a closed position over said opening; a lid lock for locking said lid in a closed position; a basket mounted within said cabinet; an agitation element mounted within said basket; a drive system coupled to said agitation element and to said basket; and a lid lock circuit comprising a sensor for generating an output signal associated with a spin speed of at least one of said agitation element and basket, a lid lock solenoid for controlling operation of said lid lock, and a control circuit for energizing said lid lock solenoid based on the sensor output signal, wherein said control circuit energizes said solenoid to lock said lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains said lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined speed after the first predetermined speed is reached, and de-energizes said solenoid to unlock said lid when the sensor output signal is indicative of a speed that is below the second predetermined speed".

None of Chamberlin, Huang, or Harwood, considered alone or in combination, describe or suggest a washing machine as recited in Claim 14. More specifically, none of Chamberlin, Huang, or Harwood, considered alone or in combination, describe or suggest a control circuit that energizes the solenoid to lock the lid when the sensor output signal is indicative of a speed that exceeds a first predetermined speed, maintains the lid in the locked condition until the sensor output signal is indicative of a second predetermined speed less than the first predetermined

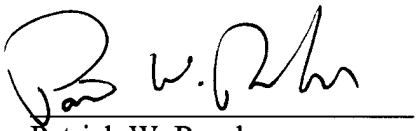
speed after the first predetermined speed is reached, and de-energizes the solenoid to unlock the lid when the sensor output signal is indicative of a speed that is below the second predetermined speed. Rather, Chamberlin describes a lid locking system wherein the lid is locked when the sensed speed is above a predetermined speed and unlocked when the sensed speed is below the same predetermined speed. Huang describes signal generating circuitry to replace Hall effect sensors. Harwood describe the use of Hall sensors to determine the speed of a washing machine motor. Accordingly, for the reasons set forth above, Claim 14 is submitted to be patentable over Chamberlin in view of Huang and further in view of Harwood et al.

Claim 16 depends from independent Claim 14. When the recitations of Claim 16 are considered in combination with the recitations of Claim 14, Applicants submit that dependent Claim 16 likewise is patentable over Chamberlin in view of Huang and further in view of Harwood et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 10-12 and 16 be withdrawn.

In view of the foregoing remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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